REMARKS

Claims 1-18 and 20-22 are pending in the present Application. By this Reply, claim 20 has been cancelled. Accordingly, claims 1-18 and 21-22 are currently at issue. Applicant submits that the present claim amendments do not introduce any new matter, and do not present any new issues that would preclude consideration of this Response after Final Rejection.

Rejections Under 35 U.S.C. § 103

In paragraph 1 of the Office Action, claim 20 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over U.S. Patent No. 3,898,053 to Singleton ("Singleton"). In paragraph 2 of the Office Action, claims 1-5, 8-11, 14, 17-18, and 21 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Singleton in view of U.S. Patent Application Publication No. 2003/0155409 to Dockus et al. ("Dockus"). In paragraph 3 of the Office Action, claims 12, 15, and 22 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Singleton in view of Dockus and U.S. Patent No. 5,863,669 to Miller ("Miller"). In paragraph 4 of the Office Action, claims 6-7 and 16 were rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Singleton in view of Dockus and U.S. Patent No. 4,929,511 to Bye et al. ("Bye"). In paragraph 5 of the Office Action, claim 13 was rejected under 35 U.S.C. § 103(a) as allegedly being unpatentable over Singleton in view of Dockus and U.S. Patent No. 6,234,377 to Teshima et al. ("Teshima"). Applicant respectfully traverses these rejections.

A. Claim 20 (Singleton)

Applicant disagrees with the Examiner's rejection of claim 20. Nevertheless, in the interests of advancing prosecution, Applicant has cancelled claim 20, and accordingly, the rejection thereof is moot.

B. Claims 1-5, 8-11, and 21 (Singleton and Dockus)

Claim 1 includes, among other elements:

> **fluxless brazing under a controlled atmosphere consisting essentially of nitrogen and/or argon at a temperature of between 580°C and 620°C, and rapid cooling, and in which at least one of the plates consists essentially of:**
>
> **(a) a core alloy … and**

(b) an aluminum brazing alloy coated as a single layer on at least one face of the core alloy…

As similarly discussed in previous Responses and interviews and explained in greater detail below, the cited references, alone or in combination, do not disclose fluxless controlled atmosphere brazing (CAB) without the use of a "braze promoting layer" or similar additional layer that is typically nickel, cobalt, or iron-based. In fact, the cited references teach away from performing fluxless CAB without the use of such a braze promoting layer. Claim 1 excludes an additional braze promoting layer through the use of the transition term, "consists essentially of." For this reason, no *prima facie* case of obviousness exists with respect to claim 1, as described in more detail below.

Singleton is expressly directed toward brazing materials for use in vacuum brazing. (See Singleton, Col. 1, Lns. 20-25; Col. 6, Lns. 57-69). The Examiner acknowledges this fact at Par. 2.c. on Page 4 of the Office Action, and the Examiner also acknowledges in the Office Action that vacuum brazing and fluxless CAB are different techniques. Applicant has previously established that fluxless CAB presents unique difficulties, and that materials designed for vacuum brazing (such as the materials in Miller) can be unsuitable for fluxless CAB, including in the previous Responses filed February 15, 2010, and August 5, 2009. The Examiner previously acknowledged this and accepted Applicant's arguments with regard to the rejections based on Dockus and Miller. Like the Miller reference discussed in the previous Responses, the materials of Singleton would require modification for use in fluxless CAB.

The Examiner proposes using the teachings of Dockus to modify the materials of Singleton for use in fluxless CAB. However, as discussed and established in previous Responses, the brazing sheet disclosed by Dockus is only suitable for fluxless CAB with the use of an additional nickel, cobalt, or iron-based braze-promoting layer. Applicant has cited examples from the disclosure of Dockus, as well as test results indicating the lack of suitability of the brazing sheets of Dockus without the braze-promoting layer, in the previous Responses. Further, Dockus makes clear that the braze-promoting layer is critical to the performance of the sheet in fluxless CAB, as also established in the previously filed Responses. Thus, Dockus does not disclose any sheets for fluxless CAB that do not include the braze-promoting layer, and Dockus also teaches away from performing fluxless CAB without the use of the braze promoting

layer. The Examiner also previously accepted these arguments with regard to the rejections based on Dockus and Miller.

In view of the above, the combination of Dockus and Singleton does not yield the claimed invention as recited in claim 1. As previously established, the use of the transition term, "consists essentially of" in claim 1 excludes the use of an additional braze-promoting layer in the recited plate. As stated above, Singleton is not suitable for fluxless CAB, and Dockus teaches fluxless CAB only in connection with a Ni/Co/Fe-based braze-promoting layer and teaches away from fluxless CAB without such a braze-promoting layer. Thus, if the teachings of Dockus are followed, the combination of Singleton and Dockus to create a sheet for fluxless CAB would necessarily include the use of the additional braze-promoting layer. The combination proposed by the Examiner, without the use of the braze-promoting layer, would go against the teachings of Dockus, and would not be expected to be suitable for fluxless CAB by one skilled in the art based on the teachings of Dockus. Accordingly, the proposed combination of Singleton and Dockus do not yield the claimed invention, and cannot create a *prima facie* case of obviousness with respect to claim 1.

Claims 2-5, 8-11, and 21 depend from claim 1 and include all the elements of claim 1. Thus, for the reasons stated above with respect to claim 1, no *prima facie* case of obviousness exists with respect to claims 2-5, 8-11, and 21.

C. Claims 14 and 17-18 (Singleton and Dockus)

Claim 14 includes, among other elements,

> **subjecting the one or more plates to fluxless brazing under a controlled atmosphere consisting essentially of nitrogen and/or argon at a temperature of between 580°C and 620°C, wherein at least one of the plates subjected to fluxless brazing consists essentially of a core alloy … with the cladding alloy coated as the single layer on at least one face of the core alloy.**

Like claim 1, claim 14 recites a process including fluxless brazing under a controlled atmosphere, with a sheet that excludes from its scope the use of a braze-promoting layer or other similar additional layer on the brazing sheet. Thus, for the same reasons stated above with respect to claim 1, no *prima facie* case of obviousness exists with respect to claim 14.

Claims 17-18 depend from claim 14 and include all the elements of claim 14. Thus, for the same reasons stated above with respect to claim 14, no *prima facie* case of obviousness exists with respect to claims 17-18.

D. Claims 12, 15, and 22 (Singleton, Dockus, and Miller)

Claims 12 and 22 depend from claim 1 and include all the elements thereof, and claim 15 depends from claim 14 and includes all the elements thereof. Thus, claims 12, 15, and 22 all exclude the use of a braze-promoting layer or other similar additional layer on the brazing sheet from the respective claim scopes. As described above, the combination of Singleton and Dockus does not disclose, teach, or suggest a sheet for fluxless CAB that does not contain a braze-promoting layer. As described in previous Responses, Miller is also directed toward materials for vacuum and/or Nocolok brazing, and does not disclose materials for use in fluxless CAB, similarly to Singleton. Thus, Miller does not remedy the deficiencies of Singleton and Dockus, and no *prima facie* case of obviousness exists with respect to claims 12, 15, and 22.

E. Claims 6-7 and 16 (Singleton, Dockus, and Bye)

Claims 6-7 depend from claim 1 and include all the elements thereof, and claim 16 depends from claim 14 and includes all the elements thereof. Thus, claims 12, 15, and 22 all exclude the use of a braze-promoting layer or other similar additional layer on the brazing sheet from the respective claim scopes. As described above, the combination of Singleton and Dockus does not disclose, teach, or suggest a sheet for fluxless CAB that does not contain a braze-promoting layer. Bye does not contain any disclosure, teaching, or suggestion that would remedy the deficiencies of Singleton and Dockus, and the Office Action does not assert otherwise. Accordingly, no *prima facie* case of obviousness exists with respect to claims 6-7 and 16.

F. Claim 13 (Singleton, Dockus, and Teshima)

Claim 13 depends from claim 1 and includes all the elements thereof. Thus, claim 13 excludes the use of a braze-promoting layer or other similar additional layer on the brazing sheet from the respective claim scopes. As described above, the combination of Singleton and Dockus does not disclose, teach, or suggest a sheet for fluxless CAB that does not contain a braze-promoting layer. Teshima does not contain any disclosure, teaching, or suggestion that would

remedy the deficiencies of Singleton and Dockus, and the Office Action does not assert otherwise. Accordingly, no *prima facie* case of obviousness exists with respect to claim 13.

CONCLUSION

In view of the foregoing, Applicant respectfully requests reconsideration of the Examiner's rejections and allowance of claims 1-18 and 21-22 in the present Application. Applicant submits that the Application is in condition for allowance and respectfully requests an early notice of the same.

Respectfully submitted,

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